

WHAT IS CLAIMED IS:

1 1. A method of designing a semiconductor device, the method
2 comprising:

3 maintaining a circuit design parameter file for a
4 circuit being designed, the circuit design parameter file
5 specifying a physical characteristic of the circuit;

6 monitoring a design environment to detect the
7 addition of a circuitry component to the circuit;

8 accessing a component design parameter file that
9 specifies at least one design parameter for that added
10 circuitry component; and

11 updating the circuit design parameter file based on
12 the at least one design parameter included in the
13 component design parameter file.

1 2. The method of claim 1 further comprising providing the
2 circuit designer with feedback concerning the physical
3 characteristic of the circuit being designed.

1 3. The method of claim 1 further comprising allowing the
2 circuit designer to request feedback concerning the physical
3 characteristic of the circuit being designed.

1 4. The method of claim 3 further comprising providing the
2 circuit designer with feedback concerning the physical
3 characteristic of the circuit being designed in response to
4 the circuit designer requesting the same.

1 5. The method of claim 1 wherein the physical characteristic
2 is the total silicon area required to construct the circuit
3 being designed, and the at least one design parameter is the
4 silicon area required to construct the added circuitry
5 component.

1 6. The method of claim 5 wherein said updating the circuit
2 design parameter file includes recalculating the total silicon
3 area required to construct the circuit being designed so that
4 it includes the silicon area required to construct the added
5 circuitry component.

1 7. The method of claim 1 wherein the physical characteristic
2 is the total number of gates required to construct the circuit
3 being designed, and the at least one design parameter is the
4 number of gates required to construct the added circuitry
5 component.

1 8. The method of claim 7 wherein said updating the circuit
2 design parameter file includes recalculating the total number
3 of gates required to construct the circuit being designed so
4 that it includes the number of gates required to construct the
5 added circuitry component.

1 9. The method of claim 1 wherein the physical characteristic
2 is the total number of transistors required to construct the
3 circuit being designed, and the at least one design parameter

4 is the number of transistors required to construct the added
5 circuitry component.

1 10. The method of claim 9 wherein said updating the circuit
2 design parameter file includes recalculating the total number
3 of transistors required to construct the circuit being
4 designed so that it includes the number of transistors
5 required to construct the added circuitry component.

1 11. The method of claim 1 wherein the physical characteristic
2 is the total number of cells required to construct the circuit
3 being designed, and the at least one design parameter is the
4 number of cells required to construct the added circuitry
5 component.

1 12. The method of claim 11 wherein said updating the circuit
2 design parameter file includes recalculating the total number
3 of cells required to construct the circuit being designed so
4 that it includes the number of cells required to construct the
5 added circuitry component.

1 13. The method of claim 1 wherein the physical characteristic
2 is the total amount of power required to power the circuit
3 being designed, and the at least one design parameter is the
4 amount of power required to power the added circuitry
5 component.

1 14. The method of claim 13 wherein said updating the circuit
2 design parameter file includes recalculating the total amount
3 of power required to power the circuit being designed so that
4 it includes the amount of power required to power the added
5 circuitry component.

1 15. The method of claim 1 further comprising monitoring a
2 design environment to detect the deletion of a circuitry
3 component from the circuit being designed.

1 16. The method of claim 15 further comprising accessing a
2 component design parameter file that specifies at least one
3 design parameter for that deleted circuitry component.

1 17. The method of claim 16 further comprising updating the
2 circuit design parameter file based on the at least one design
3 parameter included in the component design parameter file for
4 that deleted circuitry component.

1 18. An estimation process for designing a semiconductor
2 device comprising:

3 a parameter file maintenance process for maintaining
4 a circuit design parameter file for a circuit being
5 designed, the circuit design parameter file specifying a
6 physical characteristic of said circuit;

7 a design space monitoring process for monitoring a
8 design environment to detect the addition of a circuitry
9 component to said circuit;

10 a component file access process for accessing a
11 component design parameter file that specifies at least
12 one design parameter for said added circuitry component;
13 and

14 a parameter file updating process for updating said
15 circuit design parameter file based on said at least one
16 design parameter included in said component design
17 parameter file.

1 19. The process of claim 18 further comprising a feedback
2 display process for providing the circuit designer with
3 feedback concerning said physical characteristic of said
4 circuit being designed.

1 20. The process of claim 18 further comprising a feedback
2 request process for allowing the circuit designer to request
3 feedback concerning said physical characteristic of said
4 circuit being designed.

1 21. The process of claim 20 further comprising a feedback
2 display process for providing the circuit designer with
3 feedback concerning said physical characteristic of said
4 circuit being designed in response to the circuit designer
5 requesting the same.

1 22. The process of claim 18 wherein said physical
2 characteristic is the total silicon area required to construct
3 said circuit being designed, and said at least one design
4 parameter is the silicon area required to construct said added
5 circuitry component.

1 23. The process of claim 22 wherein said parameter file
2 updating process includes an area recalculation process for
3 recalculating the total silicon area required to construct
4 said circuit being designed so that it includes the silicon
5 area required to construct said added circuitry component.

1 24. The process of claim 18 wherein said physical
2 characteristic is the total number of gates required to
3 construct said circuit being designed, and said at least one
4 design parameter is the number of gates required to construct
5 said added circuitry component.

1 25. The process of claim 24 wherein said parameter file
2 updating process includes a gate recalculation process for
3 recalculating the total number of gates required to construct
4 said circuit being designed so that it includes the number of
5 gates required to construct said added circuitry component.

1 26. The process of claim 18 wherein said physical
2 characteristic is the total number of transistors required to
3 construct said circuit being designed, and said at least one

4 design parameter is the number of transistors required to
5 construct said added circuitry component.

1 27. The process of claim 26 wherein said parameter file
2 updating process includes a transistor recalculation process
3 for recalculating the total number of transistors required to
4 construct said circuit being designed so that it includes the
5 number of transistors required to construct said added
6 circuitry component.

1 28. The process of claim 18 wherein said physical
2 characteristic is the total number of cells required to
3 construct said circuit being designed, and said at least one
4 design parameter is the number of cells required to construct
5 said added circuitry component.

1 29. The process of claim 28 wherein said parameter file
2 updating process includes a cell recalculation process for
3 recalculating the total number of cells required to construct
4 said circuit being designed so that it includes the number of
5 cells required to construct said added circuitry component.

1 30. The process of claim 18 wherein said physical
2 characteristic is the total amount of power required to power
3 said circuit being designed, and said at least one design
4 parameter is the amount of power required to power said added
5 circuitry component.

1 31. The process of claim 30 wherein said parameter file
2 updating process includes a power recalculation process for
3 recalculating the total amount of power required to power said
4 circuit being designed so that it includes the amount of power
5 required to power said added circuitry component.

1 32. The process of claim 18 wherein said design space
2 monitoring process is configured to monitor a design
3 environment to detect the deletion of a circuitry component
4 from the circuit being designed.

1 33. The process of claim 32 wherein said component file
2 access process is configured to access said component design
3 parameter file that specifies at least one design parameter
4 for said deleted circuitry component.

1 34. The process of claim 33 wherein said parameter file
2 updating process is configured to update said circuit design
3 parameter file based on said at least one design parameter
4 included in said component design parameter file for said
5 deleted circuitry component.

1 35. A computer program product residing on a computer
2 readable medium having a plurality of instructions stored
3 thereon which, when executed by the processor, cause that
4 processor to:

5 maintain a circuit design parameter file for a
6 circuit being designed by a circuit designer, wherein the
7 circuit design parameter file specifies a physical
8 characteristic of the circuit;

9 monitor a design environment to detect the addition
10 of a circuitry component to the circuit;

11 access a component design parameter file that
12 specifies at least one design parameter for that added
13 circuitry component; and

14 update the circuit design parameter file based on
15 the at least one design parameter included in the
16 component design parameter file.

1 36. The computer program product of claim 35 wherein said
2 computer readable medium is a hard disk drive.

1 37. A processor and memory configured to:

2 maintain a circuit design parameter file for a
3 circuit being designed by a circuit designer, wherein the
4 circuit design parameter file specifies a physical
5 characteristic of the circuit;

6 monitor a design environment to detect the addition
7 of a circuitry component to the circuit;

8 access a component design parameter file that
9 specifies at least one design parameter for that added
10 circuitry component; and

11 update the circuit design parameter file based on
12 the at least one design parameter included in the
13 component design parameter file.

1 38. The processor and memory of claim 37 wherein said
2 processor and memory are incorporated into a personal
3 computer.